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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,366	02/27/2004	Heyg-Kyu Song	D012-1001	5142

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EXAMINER

CHIEN, LUCY P

ART UNIT	PAPER NUMBER
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2871

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/789,366	Applicant(s) SONG, HEYG-KYU	
	Examiner Lucy P. Chien	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/23/2005</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1,3-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 6788358) in view of Kubo et al (US 6456279).

Regarding Claim 1.

Kim et al discloses (figure 3) A front lighted micro liquid crystal display comprising a liquid crystal display (70), an L-shaped wedge prism (40) with a leg portion (where 32 is located) and wedge foot portion (where 36 is located) where the wedge foot portion having a first surface adapted to receive liquid crystal display (70), an opposing sloped second surface (where 36 is located), the leg portion having a top surface (where 34 is located), a shoulder (where 36 is located), a third surface extending from the top surface to the shoulder (between 32 and 36), the shoulder contiguous with the second sloped surface; a light source (34) adapted to emit light into the top surface of the leg of the L-shaped wedge prism to illuminate the liquid crystal display so that the image of the liquid crystal display can be emitted through the prismic lens for viewing.

Kim et al does not disclose a polarizing medium, partial transmission mirror, and a prismic lens.

Kubo et al discloses (Fig. 11) a polarizing medium(1c) positioned next to the sloped second surface; a partial transmission mirror (all of 1V and 40B) positioned between the partial polarizing medium and the sloped base; and a prismic lens (all of 40) with a sloped base having an angle of slope reciprocal to the angle of slope of the sloped second surface and an opposing front lens surface lying in a plane closely parallel to the plane of the first surface (Column 15, rows 13-26).

It would have been obvious to one of ordinary skilled in the art to modify Kim et al's display to include Kubo et al's polarizing medium which transmits light along only a particular axis of polarization, partial transmission mirror, and a prismic lens for viewing the image is motivated by the desire to high-quality image display can be obtained and the brightness of a screen is improved (Column 28, Rows 43-49)

Regarding Claim 3, 19, 20,

In addition to Kim et al and Kubo et al as disclosed above, Kubo et al discloses (Fig. 11) wherein the polarizing medium (1c) and the partial transmission mirror (all of 1v) are combined as a single component.

Regarding Claim 4,

In addition to Kim et al and Kubo et al as disclosed above, Kim et al discloses (Fig. 3) wherein the third surface and the shoulder are covered with reflective media (32).

Regarding Claim 5, 16,

In addition to Kim et al and Kubo et al as disclosed above, Kim et al discloses (Fig. 3) wherein the reflective media is a reflective pad.

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Regarding Claim 6.

In addition to Kim et al and Kubo et al as disclosed above, Kim et al discloses (Fig. 3) wherein the reflective media is a reflective coating on the third surface and the shoulder.

Regarding Claim 7.

In addition to Kim et al and Kubo et al as disclosed above, Kim et al discloses wherein the first surface have an antireflective coating (50) and the third surface (where 36 is located) and shoulder (between 32 and 36) are covered by a reflective media. Kubo et al discloses the second sloped having an antireflective coating (40b) (Column 9, rows 40-44).

Regarding Claim 8.

In addition to Kim et al and Kubo et al as disclosed above, Kim et al discloses (Fig. 3) wherein the reflective media is a reflective pad.

Regarding Claim 9.

In addition to Kim et al and Kubo et al as disclosed above, Kim et al discloses (Fig. 3) wherein the reflective media is a reflective coating.

Regarding Claim 10.

In addition to Kim et al and Kubo et al as disclosed above, Kubo et al discloses (Fig. 11) wherein the light source is a light emitting diode array comprising a plurality of light emitting diodes (3A).

Regarding Claim 11,

In addition to Kim et al and Kubo et al as disclosed above, Kubo et al discloses (Fig. 11) wherein the partial transmission mirror is a 50% transmission mirror.

Regarding Claim 12,15,

In addition to Kim et al and Kubo et al as disclosed above, Kubo et al (Fig. 11) discloses wherein polarizing media is a polarizing film.

Regarding Claim 13,18,

In addition to Kim et al and Kubo et al as disclosed above, Kubo et al discloses (Fig. 11) wherein the components of the front lighted micro liquid crystal display are positioned together within a frame that substantially blocks all light from exiting or entering the front lighted micro liquid crystal display except through the front lens surface of the prismic lens.

Regarding Claim 14,

In addition to Kim et al and Kubo et al as disclosed above, Kim et al discloses wherein the first surface have an antireflective coating (50) and the third surface (where 36 is located) and shoulder (between 32 and 36) are covered by a reflective media. Kubo et al discloses the second sloped having an antireflective coating (40b) (Column 9, rows 40-44) also a partial transmission mirror is a 50% transmission mirror.

Regarding Claim 17,

In addition to Kim et al and Kubo et al as disclosed above, Kubo et al (Fig. 11) discloses wherein the components of the front lighted micro liquid display are bound together within a frame.

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Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 6788358) and of Kubo et al (US 6456279) in view of Ochi et al (US 20010055076)

Regarding Claim 2.

Kim et al and Kubo et al discloses everything mentioned above.

Kim et al and Kubo et al does not disclose wherein the first surface has an antireflective coating and the sloped second surface has an antireflective coating.

Ochi et al discloses using an anti-reflective coating (Page 4, [0061]) to minimizes a reflection of light at the boundary of the front light unit and the LC display panel to effectively transmit light from the light source into the LC display panel.

It would have been obvious to one of ordinary skilled in the art to modify Kim et al, and Kubo et al to include Ochi et al's anti reflective coating motivated by the desire to minimizes a reflection of light at the boundary of the front light unit and the LC display panel to effectively transmit light from the light source into the LC display panel (Page 4, [0061]).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy P. Chien whose telephone number is 571-272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucy Chien
Examiner
Art Unit 2871
LC


ANDREW SCHECHTER
PRIMARY EXAMINER